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Satellite of Neptune. Discordances of Measures from Mean.

Date. 1899.	Position Angle. C. D. D.	Position Angle. C. D. R.	Position Angle. P. M. D.	Position Angle. P. M. R.	Mean Discord.	Distance. C. D. D.	Distance. C. D. R.	Distance. P. M. D.	Distance. P. M. R.	Mean Discord.
	°	°	°	°	°	″	″	″	″	″
Jan. 26	+0·1	−0·5	+0·7	−0·3	±·41	+·02	+·06	−·05	−·03	±·04
Feb. 2	+0·1	−0·3	+0·4	−0·2	·27	+·06	−·02	−·09	+·05	·06
17	−0·3	+0·4	−0·2	+0·2	·27	+·11	−·08	−·08	+·04	·08
28	0·0	−0·1	+0·2	−0·1	·11	+·09	−·12	−·15	+·16	·13
Mar. 1	+0·7	−1·6	+0·4	+0·5	·77	+·01	+·09	−·07	−·03	·05
1	−0·1	−0·1	−0·3	+0·4	·22	+·10	−·15	−·18	+·22	·16
2	−0·2	−0·8	−0·1	+1·1	·57	−·07	·00	−·24	+·31	·16
5	−0·8	0·0	−0·3	+1·1	·56	+·13	+·10	−·14	−·13	·13
9	−0·1	+0·1	+0·1	−0·1	·10	−·02	+·04	·00	−·04	·03
10	−0·2	−0·5	+0·6	+0·1	·37	+·36	+·15	−·36	−·15	·26
14	−0·1	+0·1	0·0	0·0	·05	+·37	−·14	−·05	−·18	·19
27	−0·5	+0·1	−0·1	+0·5	±·27	+·16	+·06	−·49	+·26	±·24
					Mean ±°·33					Mean ±″·13

Notes.

Feb. 28, image of planet elongated; Mar. 1, occulting shutter not used; Mar. 2, image of satellite elongated; Mar. 5, satellite ill defined; Mar. 10, satellite within luminosity from Neptune.

Royal Observatory, Greenwich:
1899, *May* 12.

Observations of Swift's Comet, 1899, *made at Grahamstown, South Africa.* By Major L. A. Eddie.

The first news of the discovery of this comet by Swift reached us on March 10, but, owing to the prevailing cloudy skies of this very droughty season, I was unable to make a search for the comet till March 13, when a partial clearance of the sky permitted me to sweep for it. I soon picked it up in the 9¼-inch reflector about 8 o'clock P.M. Cape uniform time. I found it fairly large and bright, of a very undefined outline, but considerably condensed in the centre, though showing no stellar nucleus or defined cometic envelopes. It was very fluffy and extremely ragged, with woolly protuberances on its northern edge, and possessed a faint, but long, straight tail, proceeding from an

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arc about one-fifth of its periphery in the direction away from the sun. It shone with a bluish-white light. It was impossible under the unfavourable circumstances to make any exact estimate of its apparent size or length of tail, though this faint appendage could be dimly traced across the field of an eyepiece possessing a field 30′ in diameter.

Friday, March 17. First evening since 13th inst. sufficiently clear of clouds for observation, and still only at intervals. Moon bright. Comet not visible to naked eye. In reflector the nucleus was more condensed than when last observed, and now nearly stellar. Coma very ragged and extended, and could be traced sweeping backwards in the well-known cometic form, and broadening the narrow tail observed on last occasion, which could still be traced for a distance about 30′, while the visible head was about $3\frac{1}{2}'$ across.

Monday, March 20. Moon very bright. No great change perceptible, but cometic matter proceeding from the head, and then bending back and broadening the tail still more noticeably, also a faint northerly extension of tail.

Wednesday, March 22. Nucleus more condensed; now decidedly stellar. Coma very diffuse, but thin. Tail broader, and of a streaky, hair-like structure. Faint supplementary tail, diverging slightly to the north. On examination of nucleus with Espin ocular spectroscope it yielded a faint continuous spectrum crossed by three bright bands, evidently those of hydrocarbon; the central one, in the green, very broad, bright, and fluffy, ragged on both sides, but more so towards the blue; the second in brightness was situated about the greenish-yellow; and the third, a faint one, in the blue. When viewed with the McClean spectroscope, these bands were partially resolved into lines tapering off towards the more refrangible end.

Thursday, March 23. Moon very bright, and sky hazy. Seeing indifferent. The bending back of lateral streamers into tail very noticeable.

Friday, March 24. Observed comet in bright twilight. No apparent change. Nucleus stellar, head bright, tail broad and fairly well seen.

Saturday, March 25. Moon nearly full. Background too bright to examine detail.

Sunday, March 26. Moon full and very brilliant; but, notwithstanding, comet in reflector appeared bright with broad tail.

Monday, March 27. Dense cloud. Picked up comet for a moment only on side of field, then again obscured by cloud. Comet not since seen, being now lost in the twilight. The colour noted on each observation was bluish-white.

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Approximate Positions.

	C.U.T.		R A.			S. Dcl.		
	h	m	h	m	s	°	′	″
March 13	8	5	1	22	45	−15	40	
17	8	0	1	7		−11	11	
20	8	0	0	59	25	8	23	30
22	7	15	0	55	25	6	29	30
23	7	15	0	53	22	5	32	30
24	6	4	0	51	10	4	44	
25	6	25	0	49	31	3	54	30
26	6	30	0	41	40	3	5	30

Instrument 9¼-inch reflector by Calver.
Powers 60 and 100.

Grahamstown,
1899 *April* 2.

Notes on the Spectra of γ *Cassiopeiæ and* o *Ceti.*

By the Rev. Walter Sidgreaves, S.J.

γ *Cassiopeiæ.*

The photographs of the spectrum of γ *Cassiopeiæ* obtained at this observatory are distributed over a period of eight years. There are fifty-two plates all told, of which half are by the old 8-inch glass and half by the Perry Memorial Objective of 15 inches aperture. With few exceptions they are all good photographs; but one of exceptional definition, of date 1898 March 7, was selected for the micrometer. From this plate the chart of the spectrum and table of wave-lengths were first constructed. The remaining plates were then examined, and it was found that with the guidance of the better plate nearly all the tabulated details could be traced also in the photographs of inferior definition.

It was not so easy to form a conclusion upon the general spectrum independently of the results of other observers. It might be in general a bright line or a dark line spectrum, but in either case it should be described as composed of hazy and weakly looking lines and bands. That there were some absorptions could hardly be doubted; the blue Hydrogen line H_γ appeared to be clearly resting on an absorption band; the Helium lines 4025 and 4471 and a line in the green 5295 were also absorptions. But for the rest, the condition of H_δ at one end of the spectrum and of the Magnesium group at the other were in favour of bright lines. The Hydrogen line seemed to have no